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Territorial captivity and voter participation in national election: a theoretical and empirical analysis.

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Abstract: We propose a theory of territorial captivity to explain the level of voter turnout in national elections. We start by showing that the consequences of voting in an election are limited to a clearly defined territory. For this reason, the expected return on the election results will be higher for electors who have high exit costs. According to the theory of rational voting, the expected return on the election results influences the level of turnout. If this is so, then we can argue that the more “territorially captive” voters are, the more likely they are to vote. We continue by describing the institutional, geographical and property-related nature of captivity. By testing our hypothesis in the context of the French parliamentary elections of 1997, we then demonstrate empirically that the constituencies in which individuals are most captive are also those with the highest turnout.

Keywords: exit, captivity, electoral turnout, labour migration, economics of voting

JEL: D72, H00

1 Introduction

The originality of this article lies in the introduction of a territorial dimension to the act of voting, from which we predict a certain number of consequences. These consequences are then tested empirically.

Our thesis is that voters who are least captive of the spatiality of their State are also the least likely to turn out to vote in national elections. Adopting a perspective based on the economic analysis of voter participation, we start with the idea that the more an individual's future depends on political decisions, the more he will involve himself in those decisions. To put it another way: one of the determinants of the level of turnout proposed by the theory of rational voting is the expected return each voter associates with the election results and ensuing public decisions. We explore the differences between these individual returns, placing particular emphasis on the constraints weighing on them.

If individuals can avoid the consequences of political decisions at little cost, then politics will hold less interest for them and they will abstain from voting. In this case, the absence of territorial captivity explains abstention. On the other hand, individuals' captivity in relation to public decisions, in terms of wages or property, will increase their interest in political choices and encourage them to vote. We propose three forms of captivity: geographical, institutional and property-related. Our predicted connections between voter captivity and electoral behaviour are then verified by an econometric study of the French parliamentary elections of 1997.

The empirical study demonstrates that, once traditional determinants of participation have been controlled for, higher turnouts can be observed in those constituencies in which there are more home-owners, more public employees or more people in state-subsidised jobs. It also shows that constituencies with a higher proportion of people who commute daily to work in neighbouring countries have lower turnouts. The article is divided into four sections. In the first, we run briefly through the main principles of the rational theory of voting. In the second, we set out our argument for the influence of territorial captivity on voter turnout. The third section presents the econometric tests, and the final section explores the results of these tests, confirming our theoretical predictions for the French parliamentary elections of 1997.

2. The economic analysis of voter participation

Since the work of Downs (1957), the decision to vote has been represented as an economic calculation, taking into account the costs and advantages of the act of voting. The expected return on voting depends on four factors.

$$R = D - C + B\pi$$

- The first element is the satisfaction the individual obtains by participating in the vote, quite independently of the election result (D). This satisfaction is derived from a simple taste for voting, a sense of civic duty (Riker and Odershook [1968], Jones and Hudson [2000]) or the opportunity to express one's political and party preferences (Fiorina [1976] Brennan and Lomasky [1993], Jones and Hudson [2000]).

- The second element, which reduces the return on voting, is the cost of participation (C): this may be the cost of the action of voting or the opportunity cost of the time devoted to making a decision (Tollison and Willet [1973]), notably in the acquisition of the information required to make the decision.

The last two elements are connected with the election itself and with its result, and they are interdependent.

- The third element is the rational individual's probability of being the decisive voter among the whole of the voting population (π), in other words the voter whose vote will win the day for - or prevent the defeat of - his preferred candidate. This probability influences the last element in the equation.

- The last element is the utility the individual obtains from the result of the election (B) (Filer and Kenny [1980]). The expected utility of the election result is generally defined as the difference between the utility obtained from the implementation of the preferred candidate's programme (c_1) and that obtained from the implementation of the other candidate's programme (c_2).

$$B = u(c_1) - u(c_2)$$

The candidates' programmes are usually evaluated on the basis of their propositions concerning the most important themes in the campaign. As a general rule, as the theoretical developments of the public choice school have demonstrated that public decisions always have redistributive consequences, the candidates' programmes can be evaluated in monetary - or at least economic - terms.

In the theoretical and empirical analysis which follows, we aim to use the concept of captivity to explore the relation between voters' turnout and their interest in the results of the election, i.e. in the public decisions implemented.

3. Voter captivity and the act of voting

The hypothesis developed in this article is an extension of the economic analysis of voter participation. It renders the concept of the expected utility of the election more precise by bringing into perspective the constraints which weigh on the voters' choices

3.1. Territory and decision

The strongest constraint weighing on the individual's decision to vote is territorial. Human action is necessarily located in space and time. Voters do not use absolute terms of reference to make their choices. They choose according to their geographical, institutional and property-related constraints. These constraints are not the result of choice. They are an expression of the relative captivity of an individual to his or her territory. Individuals are born into families, from which they inherit a legacy of property, culture, abilities and an attachment to territory, all of which increase their exit costs.

The choice we are interested in here is the decision whether or not to vote. Voting is a political act. It designates the political entrepreneur who will control the State, defined by Hayek as the organisation of a territory under one government (Hayek [1983], 167). A territory "*refers to an area of the earth delimited by abstract or physical borders which the individual cannot ignore*" (Perrin [2001], 235, quoting Perroux [1991], 163). For these reasons, the consequences of voting are territorial. The expected utility of election results is delimited by the political borders defining the area in which the public decisions will be applied. We can call this the "spatiality" of the State.

If the expected utility of the election results is limited to a certain territory and if each individual is more or less captive of his territory, then we can logically contend that a captive individual will be more motivated to vote in an election, because he knows that he will be directly affected, positively or negatively, by the resulting political decisions. The act of voting is thus dependent on the degree of captivity and/or attachment of the individual to his territory. An individual whose mobility costs are nil can always choose the spatiality of another State which suits him better, without ever participating in elections (voting with his feet).

It is because individuals are constrained by their past choices (of location or career) or by the choices of their forebears (patrimony) that they are more or less interested in the potential or actual public decisions implemented in their territory.

3.2. Captivity and participation

Having established this proposition, it remains for us to define more precisely the factors which make an individual more captive of his territory and *de facto* more concerned with election results.

An individual is captive when his exit costs are prohibitive. This is the case if the capital he has inherited is not movable, or if his income derives from State aid or public employment. It is also the case if the costs (of moving or institutional costs) of going to live in a territory controlled by another State are high. We can therefore divide the factors of captivity into three main categories: geographical, property-related and institutional.

Geographical captivity

Individuals who live closest to the national borders of States can take advantage of institutional differences at little cost. Firstly, their information costs are lower than those of individuals living in zones further away from the border. This is because they have greater knowledge of tax laws, social laws, labour law, conditions of employment (wages), etc. Secondly, the learning and adaptation costs of individuals living near borders are lower because they have some knowledge of the institutions of the neighbouring country and they already reason to some extent in terms of these institutions. Thirdly, due to the relatively low costs of moving and transport, geographical closeness facilitates investment in both territories.

For all these reasons, people living near borders are less captive of the spatiality of the State they live in – and therefore of election results - than those in the interior of the country. They are likely to be less interested in public decisions because they can always benefit from the advantages of different political orders at little cost. The expected utility of a public decision is therefore all the greater for voters who do not have this ability to take advantage, at little cost, of the economic opportunities to be found in a neighbouring territory.

Property-related captivity

Individuals possessing a sizeable patrimony are more interested in public decisions than individuals who have neither inherited nor built up any capital. This interest is even greater when their capital is immobile. The mobility of property depends partly on the nature of the goods possessed and partly on the regulatory and political controls on the movement of capital. Individuals whose property is in the form of real estate are thus more captive of political decisions, notably local ones, than those whose property is composed mainly of movable capital.

Ultimately, the expected utility of a public policy is all the more important to an individual who has inherited or possesses a large capital which he considers would be relatively costly to delocalise.

Institutional captivity

Individuals can earn wages by working in the public sector, in the private sector and/or by working in subsidised employment. Agents who earn their living through commercial transactions are dependent on the decisions of consumers and of their employers. In this way, they are captive of the market and of the firms which organise production. On the contrary, agents employed in the public sector and/or receiving assistance from the State and other public administrative bodies (local government, social

security and central State aid) are captive of the finance laws voted in Parliament by elected representatives.

Out of two different candidates, two different individuals may both prefer the one who proposes an increase in public expenditure, but the first individual may obtain far greater utility from the implementation of this programme than the second. This could be the case if the first voter is a public employee, for whom an increase in public expenditure signifies a reduction in his workload or an increase in his pay, whereas the second voter prefers the same candidate for more sociotropic reasons.

These differences in utility necessarily influence the decision to vote, and they are related to the institutional origin of the individuals' incomes¹ (market versus political order). A certain number of surveys, mainly empirical, have already demonstrated the higher levels of politicisation in general (Blais *et al.* [1997], Rouban [1998] and [2000]) and of election turnout in particular (Frey and Pommerehne [1982], Bennett and Orzechowski [1983], Jaarsma *et al.* [1986], Corey and Garand [2002]) among public employees.

The expected utility of a public policy is therefore greater for individuals who are employed or assisted by the public authorities.

3.3. Conclusions in the form of empirically testable predictions

Using the theoretical developments presented above, we can propose a certain number of original observations which have not yet been studied by voting theorists. We can also demonstrate that citizens can make use of the institutional differences between States without “voting with their feet” (delocalising), without protest and without voting (abstention). Our overall prediction is that individuals are more likely to vote in an election when they are captive of the territory in which they live. Several more specific predictions can also be made concerning election turnout (table 1).

Table 1: empirical predictions

Origin of captivity	institutional		geographical		property
	State	market	national	foreign	
Predicted effect on voter participation	+	-	+	-	+

Thus, we can expect turnout to be higher among voters who derive their income from the political order, and lower among those who derive their income from the market order. Likewise, we can expect voters who earn their living abroad, either through trade or through cross-border commuting, to vote less in national elections than those who earn their living entirely within the territory. Lastly, we can expect voters possessing property to be more likely to vote than other voters, especially when their capital is immobile (real estate). Furthermore, the effects of these three sources of captivity can be cumulative. For example, French farmers possess highly immobile capital (land), and their income, which depends largely on political decisions - through the workings of the CAP -, derives mainly from France. We can therefore expect farmers to be highly motivated to participate in political decisions and notably in national elections. We shall test these predictions in the next section.

¹ The issue here involves the source of voters' wages, not the impact of wage levels on voter participation (Filer *et al.* [1993], Greene and Nikolaev [1999]), which is based on other arguments.

4. Presentation of the empirical survey: the French parliamentary elections of 1997

Our empirical analysis is based on an econometric study of the determinants of voter turnout in the French parliamentary elections of 1997.

4.1. Description of the data and dependent variable

We have chosen to work on these elections because of the availability of data. These are the national (not local) elections which are the closest in time to the national census of 1998/1999. This census was the first for which results were published at the level of electoral constituencies, providing new opportunities for empirical work². In addition, it is impossible to conduct a study of several different elections, because the other available census data are too far off in time and/or use geographical definitions other than electoral constituencies.

We set out to explain the level of turnout, defined as the number of votes cast in proportion to the number of registered voters, in the constituencies in the second round of the elections. We have preferred to study the second round rather than the first so as not to complicate the explanation of turnout with considerations connected with the political components present in each constituency³. French parliamentary elections take the form of a uninominal majority voting system with two rounds. If no candidate gains an outright majority in the first round, then all the candidates who have obtained more than 12.5% take part in a second round. In the second round, the candidate who obtains the relative majority is elected.

**Table 2: Turnout in the second round of the 1997 parliamentary elections
(531 constituencies)**

	mean	s.d.	min	max
Turnout	71.73	4.36	55.29	84.9

Out of the 577 existing parliamentary constituencies, we have excluded the 22 constituencies corresponding to overseas territories and the 4 constituencies in Corsica, because of their socio-economic and political specificities. Another 7 constituencies are excluded because they had no second round, as one of the candidates won an absolute majority in the first round. Finally, we have also excluded those constituencies in which only one candidate was present in the second round⁴. Consequently, our sample is comprised of 531 constituencies, in which two or three candidates faced each other.

In these 531 constituencies, each containing an average of 68,840 voters, the average turnout, as a percentage of registered voters, was 72%, with a minimum of 55% and a maximum of 85% (table 1).

4.2. Measurements of property-related and institutional captivity

Two variables are used to evaluate institutional captivity. The first is the percentage of public employees in the active population of the constituency (*PubEmp*); the second is the percentage of state-subsidised employees⁵ in the active population (*SubEmp*). These two categories are the most exposed, in terms of wages, to modifications in public policy.

² As there is no yearly update of this census at a constituency level, we assume that the differences observed between constituencies are stable between 1997 and 1999.

³ For an economic analysis of voter participation in the first round of these elections, see Fauvelle-Aymar and François [2004], and François [2003].

⁴ This situation arises when two candidates from the same coalition have obtained enough votes to go through to the second round, and the candidate in second place has respected the coalition agreement to withdraw in favour of the other.

⁵ The category of subsidised job corresponds to a specific contract offered by public administration or non-profit organizations for the long-term unemployed.

Consequently, we expect constituencies containing a higher percentage of these two categories to have a higher turnout.

Table 3: Income source and patrimony

	mean	s.d.	min-max
public employee (% of AP)	17.43	3.74	6.75 – 30.05
subsidized job (% of AP)	2.24	0.93	0.47 – 5.72
home owner (% of households)	55.74	12.01	19.84 – 78.87

We obtain an approximate estimation of the possession of immobile property through the percentage of home-owners in the constituency (*Owners*), and, *ceteris paribus*, we expect the possession of real estate to encourage voter participation.

Because of its specificity (in terms of the institutional, geographical and property-related source of income) we have included the category of farmers, which is, *a priori*, the most captive socio-professional category in terms of our three criteria. Thus, the variable *Farmers* indicates the percentage of the active population working in farming. On average, 3.02% of the active population works in this sector, with a minimum of 0% and a maximum of 18.42%. Logically, we would expect a high proportion of farmers to increase turnout in a constituency.

4.3. Measurement of geographical captivity

To measure the effect of territorial captivity on voter participation, we have distinguished between the constituencies possessing none, one or two geographical borders⁶ with neighbouring European countries (Belgium, Luxembourg, Germany, Switzerland, Italy and Spain)⁷. Thus, 12% of the constituencies in our sample have at least one border (table 3). We can see that on average, the level of turnout (simple or weighted by the size of the population of the constituency) is higher in constituencies with no border.

Table 4 : Turnout in the constituencies with borders

	frequency	turnout ^(a)	commuting ^(a)
no borders	466	71.97	3.65
	87.76 %	72.17	3.59
1 border	59	70.50	7.32
	11.11 %	70.41	7.54
2 borders	6	65.35	23.75
	1.13 %	65.26	24.31
overall	531	71.73	4.29
	100%	71.90	4.28

(a): the first line in the "turnout" and "commuting" columns gives the simple mean of turnout, the second line gives the weighted mean (by population size)

However, these constituencies sustain more or less well-developed economic relations with their neighbouring countries, notably due to the fact that political borders are sometimes drawn along the lines of physical frontiers that hinder exchange. In these border constituencies, we have therefore taken into account the percentage of the active population that commutes to work outside the administrative region⁸. Thus, in constituencies with no borders, 3.65 % of the active, working population commute outside the region, compared

⁶ The list of these constituencies can be obtained by e-mail, on request (abel@univ-paris1.fr).

⁷ As we have already excluded overseas territories from our sample, borders with non-European countries are not taken into account.

⁸ This is not the precise percentage of the population working abroad but an approximation, based on the assumption that in border constituencies most of the people working outside the region actually work abroad.

with twice as many (7.32%) in constituencies with one border and six times as many (23.75%) in constituencies with two borders.

For constituencies with no borders, the variable measuring the effect of territorial captivity on turnout (Mig x Border) takes the value of zero. For constituencies with one or two borders, it takes the value of the percentage of the active population commuting to work outside the region.

4.3. Other factors influencing turnout: the control variables

The first factor which must be controlled for, by including the variable *Unemp*⁹, is the impact of unemployment on turnout in constituencies.

There are several reasons why this is important. Firstly, some of the French regions bordering other countries are currently going through a period of industrial restructuring (Nord-Pas de Calais, Ardennes, Lorraine, Franche-Comté). They consequently display demographic or economic specificities, which have widely recognised effects on election turnout. For example, these zones have a high level of state-subsidised employment, the beneficiaries of which are naturally very interested in election results. Equally, these regions suffer from relatively high levels of unemployment, which has a negative impact on voter participation. It is therefore necessary to control for the effect of these specificities on turnout, both to evaluate correctly the impact of territorial captivity on turnout and to avoid any bias from the omission of variables. Secondly, there may be colinearity between this variable and the other economic variables, notably *Farmers*, *SubEmp* and *PubEmp*¹⁰. By comparing a first regression carried out using all the variables (regression *a*) and a second regression in which the rate of unemployment is excluded (regression *b*), we can demonstrate that any potential multicollinearity has no effect on the sign and significance of the estimated coefficients.

The other variables¹¹ can be divided into two sets. The first set comprises factors connected with the election campaign; the second groups together the socio-demographic characteristics of the constituency.

Firstly, campaign expenditure enables us to take into account the intensity of the candidates' commitment to the electoral competition. After several tests, and following both theoretical postulates and the results of previous empirical studies (Fauvelle-Aymar and François [2005]), we have chosen to use the total spending of candidates per registered voter (*SpendRV*) in the form of a third degree polynomial. The effect of candidates' spending should be positive but the marginal return should decrease.

Secondly, we integrate the *Downsian closeness hypothesis* (Downs [1957]) into our model, in other words the impact of the expected closeness of the result on individuals' decisions whether or not to vote. As we are studying the second round, we quantify the margin between the leading candidate and the second-placed candidate in the first round of the elections, which took place a week earlier (*Marge*)¹². According to the literature (Fauvelle-Aymar and François [2005]), the smaller this margin is in the first round, the higher the turnout is in the second round. Theoretically, the sign of this coefficient is therefore negative. Thirdly, the variable *ThreeCand* controls for the composition of the choice of candidates in the second round, as it takes the value 1 when there are three candidates and 0 when there

⁹ Defined by the share of the active population without a job.

¹⁰ The matrix of coefficients of correlation is given in appendix 2.

¹¹ Appendix 1 presents the statistical characteristics of the variables.

¹² The precise definition chosen takes into account the multi-party nature of the election, and is

expressed by
$$Marge = \frac{V_1 - V_2}{\sum_i V_i}$$

are only two candidates. As the presence of a third candidate increases the political choice available, we can expect it to have a positive effect on turnout (François [2003]).

As for the demography of the constituencies, we have taken into account the proportion of women in the total population (*Women*), and the proportion of 18 to 20 year-olds (*PopAge1820*) and over-60's in the total population (*PopAge>60*), given that there is a lower turnout among these two age groups.

Finally, the relation to be calculated is the following:

$$\begin{aligned} \text{Particip}_i = & \text{intercept} + \alpha_1 \text{SpendRV}_i + \alpha_2 \text{SpendRV}_i^2 + \alpha_3 \text{SpendRV}_i^3 + \alpha_4 \text{Marge}_i + \alpha_5 \text{ThreeCand}_i \\ & + \beta_1 \text{Women}_i + \beta_2 \text{PopAge1820}_i + \beta_3 \text{PopAge>60}_i + \gamma_1 \text{Farmers}_i + \gamma_2 \text{Owners}_i \\ & + \gamma_3 \text{CivilEmp}_i + \gamma_4 \text{SubEmp}_i + \gamma_5 \text{Mig} \times \text{Border}_i + \varepsilon_i \end{aligned}$$

5. Results of the estimations

The results of the two estimations are presented in table 3. It appears that the quality of the estimations is satisfactory, as the two R^2 exceed 60%. The variables expressing the impact of the election campaign on turnout have the expected effects. Thus, campaign expenditure has a decreasing marginal return in terms of voter mobilisation, while the presence of a third candidate (*ThreeCand*) and the expectation of a close result (*Marge*) have a positive influence on turnout.

As for the socio-demographic factors, the category (*Women*) has no significant effect on turnout, whereas the proportions of the two age groups (*PopAge1820* and *PopAge>60*) have a negative influence when they are significant (i.e. in 3 cases out of 4).

The variables used to measure the effect of captivity on turnout are all significant and have the expected sign. Firstly, constituencies with a higher proportion of home-owners (*Owners*) have higher turnout, confirming the impact of patrimonial captivity. Secondly, constituencies in which a high proportion of the active population is in public employment (*PubEmp*) or state-subsidised employment (*SubEmp*) also have a higher turnout. This appears to confirm the effect of institutional captivity. Thirdly, daily commuting to work in neighbouring countries (*Mig x border*) has a negative and strongly significant effect, whether or not the rate of unemployment is controlled for. Thus, an increase of one percent in the share of the active population working abroad in constituencies with at least one national border leads to a 0.1 percent reduction in turnout. The empirical analysis thus appears to validate our predictions concerning the influence of territoriality on the decision whether or not to vote.

These results for the control variables are confirmed both with and without taking into account the variable representing the rate of unemployment (regressions (a) and (b)). Even if there is some multicollinearity, this does not change the sign, significance or scale of the effects of the other variables. In addition, the effect of cross-border commuting cannot be explained by the neglected impact of the rate of unemployment, which further strengthens the robustness of our conclusions.

Finally, agricultural constituencies (*Farmers*), which accumulate positive turnout effects from all three forms of captivity, display a much higher rate of turnout than other constituencies. In any given constituency, the higher the proportion of the active population working in the farming sector, the higher the turnout in national elections.

Table 5: Estimation of turnout (OLS)

dependent variable:
turnout

independent variables	(a) coefficient <i>student t</i>	(b) coefficient <i>student t</i>
SpendRV	1.336 *** 2.55	1.712 *** 3.44
SpendRV ²	-0.078 ** -2.38	-0.101 *** -3.29
SpendRV ³	0.001 ** 2.24	0.002 *** 3.10
ThreeCand	1.817 *** 6.25	1.438 *** 4.98
Marge	-11.707 *** -5.54	-0.105 *** -4.82
Women	-0.248 -1.46	-0.070 -0.39
PopAge1820	-0.391 ** -2.19	-0.400 ** -2.13
PopAge>60	-0.075 -1.25	-0.150 ** -2.40
Farmers	0.323 *** 3.79	0.534 *** 6.35
Owners	0.119 *** 6.42	0.166 *** 9.01
PubEmp	0.104 ** 2.67	0.135 *** 3.29
SubEmp	2.075 *** 8.77	0.871 *** 5.16
Unemp	-0.385 *** -6.92	-
Mig x border	-0.146 *** -6.86	-0.119 *** -5.70
Intercept	73.42 *** 8.05	58.46 *** 6.28
	F(14,516) = 67.36 R ² adj. : 0.63 N = 531	F(13,517) = 62.48 R ² adj. : 0.60 N = 531

Estimation with ordinary least squares

The t-ratios are corrected by the method of White (1980).

*** means that the coefficient is statistically significant at the 1 percent level, ** at the 5 percent level and * at the 10 percent level.

6. Conclusion

This article has demonstrated the effect of territorial captivity on the decision whether to vote in national elections. It provides new insight into existing interpretations of the influence on turnout of patrimony and sources of income and adds a geographical dimension that has until now been overlooked. It could be extended through a deepening of the theory of captivity and through further empirical tests on local and European elections.

- It is likely that European elections mobilise the voters who are most captive of EU decisions, in other words border-dwellers, farmers, inhabitants of disadvantaged zones receiving European structural funds and the owners of movable capital.
- At a local level, it is also likely that property-related captivity plays a very important role both in turnout and in political involvement, as the value of real estate is very dependent on decisions concerning zoning and local government infrastructures.

Appendix 1: Description of variables

	Mean	Standard deviation	Min – Max
Particip	71.73	4.36	55.29 – 84.9
SpendRV	12.66	3.68	5.66 – 31.71
ThreeCand	0.15	0.35	0 – 1
Marge	8.25	6.68	0 – 30.3
Women	52.25	1.22	49.92 – 57.00
Popage1820	5.18	1.02	2.78 – 9.05
Popage>60	21.70	4.94	8.60 – 35.79
Farmers	3.02	3.37	0 – 18.42
Owners	55.74	12.01	19.84 – 78.87
Mig x boundary	1.09	4.49	0 – 37.76
PubEmp	17.43	3.74	6.75 – 30.05
SubEmp	2.24	0.93	0.47 – 5.72
Unemp	12.84	3.91	5.99 – 36.73

Appendix 2: Partial coefficients of correlation

	Unemp	Farmers	Owners	PubEmp	SubEmp	MigxBorder
Unemp	1					
Farmers	-0.24 ***	1				
Owners	-0.37 ***	0.59 ***	1			
PubEmp	0.66 ***	0.28 ***	0.13 ***	1		
SubEmp	0.23 ***	-0.35 ***	-0.32 ***	0.12 ***	1	
MigxBorder	-0.11 **	-0.11 **	0.04	-0.09 **	-0.23 ***	1

*** means that the coefficient is statistically significant at the 1 percent level, ** at the 5 percent level and * at the 10 percent level.

References

- Aldrich J. [1997], "When Is It Rational to Vote?", in Mueller D. (ed)[1997], *Perspective on Public Choice, a Handbook*, Cambridge: Cambridge University Press, pp.379-390.
- Bennett J. and Orzechowski W. [1983], "The Voting Behavior of Bureaucrats: Some Empirical Evidence", *Public Choice*, 41: 271-283.
- Blais A. [2000], *To Vote or Not to Vote? The Merits and Limits of Rational Choice Theory*, Pittsburgh: University of Pittsburgh Press.
- Blais A., Blake D. and Dion S. [1997], *Government, Parties, and Public Sector Employees*, Pittsburgh: University of Pittsburgh Press.
- Brennan G. and Lomasky L. [1993], *Democracy and Decision. The Pure Theory of Electoral Preference*, Cambridge (Mass.): Cambridge University Press.
- Corey E. and Garand J. [2002], "Are Government Employees more Likely to Vote?: An Analysis of Turnout in the 1996 U.S. National Election", *Public Choice*, 38: 253-262.
- Dhillon A. and Peralta S. [2002], "Economic Theories of Voter Turnout.", *Economic Journal*, 112 (June): 332-52.
- Downs A. [1957], *An Economic Theory of Democracy*, New York: Harper et Brothers Publishers
- Fauvelle-Aymar C. and François A. [2005], Campaigns, Political Preferences and Turnout. An Empirical Study of the 1997 French Legislative Elections, *French Politics*, forthcoming.
- Feddersen T. [2004], "Rational Choice Theory and the Paradox of Not Voting.", *Journal of Economic Perspectives*, 18(1): 99-112.
- Filer J. and Kenny L. [1980], "Voter Turnout and the Benefits of Voting", *Public Choice*, 35: 575-585.
- Filer J., Kenny L. and Morton R. [1993], "Redistribution, Income and Voting", *American Journal of Political Science*, 37(1): 63-87.
- Fiorina M. [1976], "The Voting Decision: Instrumental and Expressive Aspects.", *Journal of Politics*, 38(2): 390-413, May.
- François A. [2003], *Political Economy of Electoral Campaign Resources : Theoretical and Empirical Analysis*, Ph Dissertation, unpublished
- Frey B. and Pommerehne W. [1982], "How Powerful are Public Bureaucrats as Voters?", *Public Choice*, 38: 253-262.
- Greene K. and Nikolaev O. [1999], "Voter Participation and the Redistributive State", *Public Choice*, 98(1-2): 213-226.
- Hayek F. [1983], *Droit, législation et liberté*, PUF, Coll. Libre échange, Paris.
- Jaarsma B., Schram A. and Van Winden F. [1986], "On the Voting Participation of Public Bureaucrats", *Public Choice*, 48: 183-187.
- Jones P. and Hudson J. [2000], "Civic Duty and Expressive Voting: Is Virtues its Own Reward?", *Kyklos*, 53(1): 3-16.
- Mueller D. [2003], *Public Choice III*, Cambridge: Cambridge University Press.
- Perrin P. [2001], "Un apport autrichien à la théorie du territoire", *Revue d'économie régionale et urbaine*, n°2: 229-248.

- Riker W. and Ordeshook P. [1968], "A Theory of the Calculus of Voting.", *American Political Science Review*, 62: 25-43.
- Rouban L. [1998], "La politisation des Fonctionnaires en France : Obstacle ou Nécessité?", *Revue Française d'Administration Publique*, 86: 167-182.
- Rouban L. [2000], "La Culture Politique du Secteur Public: Les Chemins de l'Utilitarisme", in Bréchon *et al.* (eds) [2000], *Les Cultures Politiques des Français*, Paris: Presses de Science Po.
- Struthers J. et Young A. [1989], "Economics of Voting. Theories and Evidence.", *Journal of Economic Studies*, 16(5): 1-43.
- Tollison and Willet [1973], "Some Simple Economics of Voting and Non-Voting", *Public Choice*, 16: 59-72.